

Application No.: 10/728,150

Docket No.: JCLA8534-D

AMENDMENTS

In The Claims:

- 1-230. (canceled)
231. (new) An electric component comprising:
a die having a top surface at a horizontal level;
a bottommost metal layer over said horizontal level and extending to a place not over said die, wherein said bottommost metal layer is connected to said die; and
a passive device over said horizontal level.
232. (new) The electric component in claim 231 further comprising a substrate joined with said die, wherein said substrate is under said horizontal level.
233. (new) The electric component in claim 232, wherein said substrate comprises polymer.
234. (new) The electric component in claim 232, wherein said substrate comprises resin.
235. (new) The electric component in claim 232, wherein said substrate comprises imide.
236. (new) The electric component in claim 232, wherein said substrate comprises plastic.
237. (new) The electric component in claim 232, wherein said substrate comprises thermosetting plastic.
238. (new) The electric component in claim 232, wherein said substrate comprises metal.
239. (new) The electric component in claim 232, wherein said substrate is formed using a process comprising pressing.
240. (new) The electric component in claim 232, wherein said substrate is formed using a process comprising injection molding.
241. (new) The electric component in claim 232, wherein a cavity is in said substrate and accommodates said die.
242. (new) The electric component in claim 232, wherein said substrate has a surface substantially coplanar with said top surface of said die.

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243. (new) The electric component in claim 231 further comprising an insulation layer between said bottommost metal layer and said horizontal level.

244. (new) The electric component in claim 243, wherein said insulation layer comprises polyimide (PI).

245. (new) The electric component in claim 243, wherein said insulation layer comprises benzocyclobutene (BCB).

246. (new) The electric component in claim 243, wherein said insulation layer comprises a porous structure.

247. (new) The electric component in claim 231 further comprising an insulation layer over said bottommost metal layer.

248. (new) The electric component in claim 247, wherein said insulation layer comprises polyimide (PI).

249. (new) The electric component in claim 247, wherein said insulation layer comprises benzocyclobutene (BCB).

250. (new) The electric component in claim 247, wherein said insulation layer comprises a porous structure.

251. (new) The electric component in claim 231 further comprising an insulation layer between said passive device and said horizontal level.

252. (new) The electric component in claim 251, wherein said insulation layer comprises polyimide (PI).

253. (new) The electric component in claim 251, wherein said insulation layer comprises benzocyclobutene (BCB).

254. (new) The electric component in claim 251, wherein said insulation layer comprises a porous structure.

255. (new) The electric component in claim 231 further comprising an insulation layer over said passive device.

256. (new) The electric component in claim 255, wherein said insulation layer comprises polyimide (PI).

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257. (new) The electric component in claim 255, wherein said insulation layer comprises benzocyclobutene (BCB).

258. (new) The electric component in claim 255, wherein said insulation layer comprises a porous structure.

259. (new) The electric component in claim 231, wherein said top surface comprises multiple pads.

260. (new) The electric component in claim 231, wherein said bottommost metal layer comprises a portion connecting multiple internal circuits of said die.

261. (new) The electric component in claim 260, wherein said die portion is used to transmit a signal.

262. (new) The electric component in claim 260, wherein said die portion is used to provide a power voltage.

263. (new) The electric component in claim 260, wherein said die portion is used to provide a ground voltage.

264. (new) The electric component in claim 231 further comprising an additional die, said bottommost metal layer being over said additional die, wherein said bottommost metal layer comprises a portion connecting said die and said additional die.

265. (new) The electric component in claim 231 further comprising a film layer around said die.

266. (new) The electric component in claim 265, wherein said film layer comprises polymer.

267. (new) The electric component in claim 265, wherein said film layer comprises epoxy.

268. (new) The electric component in claim 265, wherein said film layer has a surface substantially coplanar with said top surface of said die.

269. (new) The electric component in claim 231 further comprising a bump over said horizontal level, wherein said bump comprises solder.

270. (new) The electric component in claim 231 further comprising a bump over said horizontal level, wherein said bump comprises gold.

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271. (new) The electric component in claim 231, wherein said passive device comprises a resistor.

272. (new) The electric component in claim 231, wherein said passive device comprises a capacitor.

273. (new) The electric component in claim 231, wherein said passive device comprises an inductor.

274. (new) The electric component in claim 231, wherein said passive device comprises a filter.

275. (new) The electric component in claim 231, wherein said passive device comprises a waveguide.

276. (new) The electric component in claim 231, wherein said passive device comprises a micro electronic mechanical sensor (MEMS).

277. (new) The electric component in claim 231, wherein there is no die under said passive device.

278. (new) The electric component in claim 231, wherein said passive device is connected to a circuit trace of said bottommost metal layer.

279. (new) The electric component in claim 231, wherein said passive device is connected to said die.

280. (new) An electric component comprising:

a substrate comprising metal;

a die joined with said substrate, said die having a top surface at a horizontal level, wherein said substrate is under said horizontal level; and

a passive device over said horizontal level.

281. (new) The electric component in claim 280 further comprising a metal layer over said horizontal level.

282. (new) The electric component in claim 281, wherein said metal layer is over said die and extends to a place not under said die.

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283. (new) The electric component in claim 281 further comprising an insulation layer between said die and said metal layer.

284. (new) The electric component in claim 283, wherein said insulation layer comprises polyimide.

285. (new) The electric component in claim 283, wherein said insulation layer comprises benzocyclobutene (BCB).

286. (new) The electric component in claim 283, wherein said insulation layer comprises a porous structure.

287. (new) The electric component in claim 281 further comprising an insulation layer over said metal layer.

288. (new) The electric component in claim 287, wherein said insulation layer comprises polyimide.

289. (new) The electric component in claim 287, wherein said insulation layer comprises benzocyclobutene (BCB).

290. (new) The electric component in claim 287, wherein said insulation layer comprises a porous structure.

291. (new) The electric component in claim 281, wherein said metal layer comprises a portion connecting multiple internal circuits of said die.

292. (new) The electric component in claim 291, wherein said portion is used to transmit a signal.

293. (new) The electric component in claim 291, wherein said portion is used to provide a ground voltage.

294. (new) The electric component in claim 291, wherein said portion is used to provide a power voltage.

295. (new) The electric component in claim 281 further comprising an additional die, said metal layer being over said die and said additional die, wherein said metal layer comprises a portion connecting said die and said additional die.

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296. (new) The electric component in claim 281, wherein said metal layer comprises a portion connecting said passive device and an internal circuit of said die.

297. (new) The electric component in claim 280, wherein a cavity is in said substrate and accommodates said die.

298. (new) The electric component in claim 280, wherein said substrate has a surface substantially coplanar with said top surface of said die.

299. (new) The electric component in claim 280 further comprising a film layer around said die and over said substrate.

300. (new) The electric component in claim 299, wherein said film layer comprises polymer.

301. (new) The electric component in claim 299, wherein said film layer comprises epoxy.

302. (new) The electric component in claim 299, wherein said film layer has a surface substantially coplanar with said top surface of said die.

303. (new) The electric component in claim 280 further comprising a bump over said horizontal level, wherein said bump comprises solder.

304. (new) The electric component in claim 280 further comprising a bump over said horizontal level, wherein said bump comprises gold.

305. (new) The electric component in claim 280, wherein said passive device comprises a resistor.

306. (new) The electric component in claim 280, wherein said passive device comprises a capacitor.

307. (new) The electric component in claim 280, wherein said passive device comprises an inductor.

308. (new) The electric component in claim 280, wherein said passive device comprises a filter.

309. (new) The electric component in claim 280, wherein said passive device comprises a waveguide.

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310. (new) The electric component in claim 280, wherein said passive device comprises a micro electronic mechanical sensor (MEMS).

311. (new) The electric component in claim 280, wherein said passive device comprises a portion not over said die.

312. (new) The electric component in claim 280 further comprising an insulation layer between said passive device and said horizontal level.

313. (new) The electric component in claim 312, wherein said insulation layer comprises polyimide (PI).

314. (new) The electric component in claim 312, wherein said insulation layer comprises benzocyclobutene (BCB).

315. (new) The electric component in claim 312, wherein said insulation layer comprises a porous structure.

316. (new) The electric component in claim 280 further comprising an insulation layer over said passive device.

317. (new) The electric component in claim 316, wherein said insulation layer comprises polyimide (PI).

318. (new) The electric component in claim 316, wherein said insulation layer comprises benzocyclobutene (BCB).

319. (new) The electric component in claim 316, wherein said insulation layer comprises a porous structure.